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REPORT
101-220

CONGRESSIONAL SCHOLARSHIPS FOR SCIENCE, MATHEMATICS, AND ENGINEERING ACT

AUGUST 4, 1989.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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Mr. ROE, from the Committee on Science, Space, and Technology, submitted the following

REPORT

[To accompany H.R. 996]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 996) to establish the Congressional Scholarships for Science, Mathematics, and Engineering, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

CONTENTS

	Page
I. Summary	8
Purpose of the Bill	8
Nature of the Scholarship Program	9
Funding for the Scholarship Program	9
II. Committee Actions	10
III. Explanation of Committee Amendment	10
General Provisions of Scholarship Program	10
Four-year Scholarships	11
Two-year Scholarships	13
Other Provisions of the Bill	14
Authorization Levels	15
IV. Sectional Analysis of the Bill, H.R. 996	15
V. Committee Views	19
1. The Human Resource Pipeline for Science, Mathematics and Engineering	19
2. Selection Criteria for Congressional Scholarships	20
3. Scholarship Award Amounts	21
4. Service Commitment in Two-Year Scholarship Programs	21
5. Nominating Committees for Four-year Scholarship Program	22
6. Effect of Certain Controlled Substance and Felony Convictions	22

29-006

H703-4

VI. Legislative History 23
VII. Committee Oversight Activities 24
VIII. Oversight Findings and Recommendations by the Committee on Government Operations 25
IX. Congressional Budget Office Cost Estimate 25
X. Impact on Inflation 26
XI. Committee Recommendation 26
XII. Changes in Existing Law Made by the Bill, As Reported 26

The amendment is as follows:

Strike out all after the enacting clause and insert in lieu thereof the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "Congressional Scholarships for Science, Mathematics, and Enineering Act".

SEC. 2. FINDINGS.

The Congress finds that—

(1) science and technology are cornerstones of America's efforts to develop products and services which will compete in the global marketplace and improve Americans' standards of living and quality of life;

(2) Americans' ability to pursue scientific and technical careers and to render informed judgments on scientific and technical issues have been hampered by low levels of educational attainment in science and mathematics;

(3) the achievement of universal "scientific literacy" by all Americans, including those who choose not to become scientists or engineers, is an essential goal of all programs designed to strengthen American competitiveness in science, mathematics, and engineering;

(4) young people from across the Nation who have demonstrated talents and interests in science and mathematics should be encouraged to pursue careers in those fields, both to inspire other students and to increase participation in scientific and technical professions;

(5) the preparation of a new generation of scientific and technical professionals, and the education of all Americans in the risks and benefits of modern science and technology, requires a strong, coordinated effort to strengthen the teaching of science and mathematics by encouraging qualified individuals to enter the teaching profession; and

(6) greater emphasis must be placed on increasing the participation in teaching of science and mathematics, as well as in the scientific and technical professions, of groups of Americans currently underrepresented in those fields.

SEC. 3. PURPOSES.

It is the purpose of this Act—

(1) to strengthen the United States science, mathematics, and engineering base by offering opportunities to pursue postsecondary education in science, mathematics, and engineering;

(2) to encourage role models in scientific, mathematics, and engineering fields for young people;

(3) to strengthen the United States scientific, mathematics, and engineering potential by encouraging equal participation of women with men in scientific, mathematics, and engineering fields; and

(4) to attract talented students to teaching careers in science and mathematics in elementary and secondary schools.

SEC. 4. FOUR-YEAR SCHOLARSHIP PROGRAM.

(a) ESTABLISHMENT OF PROGRAM.—The Director of the National Science Foundation (hereafter in this Act referred to as the "Director") shall establish and implement a competitive, merit-based program for selecting one male and one female from each congressional district of the United States each year to receive a four-year congressional scholarship for science, mathematics, and engineering.

(b) NOMINATING COMMITTEES.—The Director shall establish for each congressional district, or, to the extent a contiguous group of congressional districts reflects a geographic region similar in demographics, geography, and economic status and activity, for each such group of congressional districts, a broad-based committee of educators, scientists, mathematicians, and engineers who shall serve as volunteers without compensation. Each such committee shall submit to the Director nominations of one male and one female from each congressional district for scholarships under

this Act. If the Director rejects a nomination made under this subsection on the basis that the nominee does not meet the requirements of subsection (c) or (d), the nominating committee shall submit a substitute nomination. The membership of each committee shall reflect geographic distribution within its area. Committees established under this subsection shall not be subject to the Federal Advisory Committee Act.

(c) ELIGIBILITY.—Only individuals who are citizens or nationals of the United States, or who are aliens lawfully admitted to the United States for permanent residence, shall be eligible for scholarships under this section. Scholarship awardees shall be selected while in their senior year of high school, or, if they have previously graduated from high school, upon making application for admission as a freshman to an institution of higher education, but, prior to receiving a scholarship, must have been accepted for admission to an institution of higher education in the United States that is currently accredited by a nationally recognized accrediting agency or association.

(d) CRITERIA FOR NOMINATION AND SELECTION.—Individuals shall be nominated and selected for scholarships under this section on the basis of potential to successfully complete a postsecondary program in science, mathematics, or engineering, and on the basis of motivation to pursue a career in science, mathematics, or engineering. In addition, consideration may be given to the financial need of the individual, and to promoting participation by minorities and individuals with disabilities. The Director shall determine the criteria for measuring the potential and motivation of nominees.

(e) NATURE AND AMOUNT OF SCHOLARSHIPS.—Scholarships awarded under this section may be used only for tuition, fees, room and board, and other reasonable education expenses. Such scholarships shall be $5,000 per year, except as necessary to accommodate a recipient completing a four-year academic program in less than four years.

(f) MAINTAINING ELIGIBILITY.—(1) In order to maintain eligibility to receive funds pursuant to a scholarship awarded under this section, a student must—

(A) be enrolled at an institution of higher education in the United States that is currently accredited by a nationally recognized accrediting agency or association;

(B) major in any field of science, mathematics, or engineering;

(C) maintain superior performance, as determined by the Director; and

(D) except as provided in paragraph (2) or (3), carry a full-time academic work load, as determined by the institution in which the student is enrolled under standards applicable to all students enrolled in that student's program.

(2) Upon application by a scholarship recipient, the Director may make an exception to the requirements under paragraph (1) in any of the following cases:

(A) Active duty as a member of the armed services.

(B) Disability certified by a qualified physician.

(C) Exceptional personal circumstances or emergencies.

(D) Pregnancy, child-rearing, or other family responsibilities.

(3) Each exception made under paragraph (2) shall be effective for not longer than 2 years, after which the recipient may reapply for an additional exception under such paragraph.

(4) If an individual who has received an award under this section fails to maintain eligibility under this subsection, such individual shall be required to pay to the United States such amounts as would be payable, in the same manner as they would be payable, if at the time the amounts were received the amounts were a loan and the recipient were a new borrower under part B of title IV of the Higher Education Act of 1965.

(g) NOTIFICATION OF MEMBERS OF CONGRESS.—The Director shall notify each Member of Congress of selections made from such Member's district before public announcement of such selections is made.

(h) MONITORING IMPLEMENTATION AND COMPLIANCE.—The Director shall monitor the implementation of and compliance of the nominating committees with this section.

(i) SOLICITATION, NOMINATION, AND SELECTION OF STUDENTS.—The Director shall ensure that the solicitation, nomination, and selection of students for the programs established by this section shall be carried out without discrimination on the basis of race, age, physical disability, religion, ethnic background, economic status, or sexual preference.

(j) SELECTION OF NOMINATING COMMITTEES.—The Director shall ensure that the selection of nominating committees under subsection (b) shall be carried out without

discrimination on the basis of race, age, physical disability, religion, ethnic background, economic status, sex, or sexual preference.

SEC. 5. TWO-YEAR SCHOLARSHIP PROGRAM.

(a) ESTABLISHMENT OF PROGRAM.—The Director shall establish a competitive, merit-based program for awarding congressional scholarships to students enrolled in a baccalaureate degree program in science, mathematics, or engineering who are willing to commit themselves to teach elementary or secondary science or mathematics.

(b) ELIGIBILITY.—Only individuals who are—

(1) citizens or nationals of the United States, or who are aliens lawfully admitted to the United States for permanent residence;

(2) majoring in science, mathematics, or engineering;

(3) in the last 2 years of a baccalaureate degree program; and

(4) enrolled in an institution of higher education in the United States which is currently accredited by a nationally recognized accrediting agency or association,

shall be eligible for awards under this section.

(c) SELECTION CRITERIA.—Individuals shall be selected to receive awards under this section on the basis of academic merit and demonstrated accomplishment in science, mathematics, or engineering. In addition, consideration may be given to the financial need of the individual, and to promoting participation by minorities, women, and individuals with disabilities.

(d) NATURE AND AMOUNT OF SCHOLARSHIPS.—(1) A total of 500 awards for two-year scholarships shall be made each year at the rate of $7,500 per year to individuals willing to commit themselves to teach elementary or secondary science or mathematics as specified in subsection (f). An additional period of scholarship support, not to exceed one year, and at the same rate of $7,500 per year, shall be available to scholarship recipients who have completed requirements for the baccalaureate degree but require additional credits in education courses in order to obtain certification to teach.

(2) Scholarships awarded under paragraph (1) may be used only for tuition, fees, room and board, and other reasonable educational expenses.

(e) MAINTAINING ELIGIBILITY.—(1) In order to maintain eligibility to receive funds pursuant to a scholarship awarded under this section, a student must—

(A) be enrolled at an institution of higher education in the United States that is currently accredited by a nationally recognized accrediting agency or association;

(B) major in any field of science, mathematics, or engineering;

(C) maintain superior performance, as determined by the Director; and

(D) except as provided in paragraph (2) or (3), carry a full-time academic work load, as determined by the institution in which the student is enrolled under standards applicable to all students enrolled in that student's program.

(2) Upon application by a scholarship recipient, the Director may make an exception to the requirements under paragraph (1) in any of the following cases:

(A) Active duty as a member of the armed services.

(B) Disability certified by a qualified physician.

(C) Exceptional personal circumstances or emergencies.

(D) Pregnancy, child-rearing, or other family responsibilities.

(3) Each exception made under paragraph (2) shall be effective for not longer than 2 years, after which the recipient may reapply for an additional exception under such paragraph.

(f) SERVICE REQUIREMENT.—An individual receiving an award under this section shall be required to complete, within 6 years after graduation from the baccalaureate degree program for which the award was made or after completion of the additional period of scholarship support, if applicable, at least 2 years of service as an elementary or secondary science or mathematics teacher for each year of scholarship support under this Act, except that such requirement shall not exceed a total of 4 years. Service required under this section shall be performed at a school receiving assistance under chapter 1 of title I of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 2701 et seq.).

(g) FAILURE TO COMPLETE SERVICE OBLIGATION.—

(1) GENERAL RULE.—If an individual who has received an award under this section—

(A) fails to maintain an acceptable level of academic standing in the educational institution in which he is enrolled, as determined by the Director;

(B) is dismissed from such educational institution for disciplinary reasons;

(C) withdraws from the baccalaureate degree program for which the award was made before the completion of such program;

(D) declares intent not to fulfill the service obligation under this section; or

(E) fails to fulfill the service obligation under this section,

such individual shall be liable to the United States as provided in paragraph (2).

(2) AMOUNT OF REPAYMENT.—(A) If a circumstance described in paragraph (1)(A), (B), (C), (D), or (E) occurs before the completion of one year of a service obligation under this section, the United States shall be entitled to recover from the individual, within 1 year after the date of the occurrence of such circumstance, an amount equal to—

(i) the total amount of awards received by such individual under this section; plus

(ii) the interest on such amounts which would be payable if at the time the amounts were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States.

(B) If a circumstance described in paragraph (1)(A), (B), (C), (D), or (E) occurs after the completion of 1 year of a service obligation under this section, but before the completion of the second year of such service obligation, the United States shall be entitled to recover from the individual, within 1 year after the date of the occurrence of such circumstance, an amount equal to—

(i) the total amount of awards received by such individual under this section minus $3,750; plus

(ii) the interest on such amounts which would be payable if at the time the amounts were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States.

(C) If a circumstance described in paragraph (1)(A), (B), (C), (D), or (E) occurs after the completion of 2 years of a service obligation under this section, but before the completion of the third year of such service obligation, the United States shall be entitled to recover from the individual, within 1 year after the date of the occurrence of such circumstance, an amount equal to—

(i) the total amount of awards received by such individual under this section minus $7,500; plus

(ii) the interest on such amounts which would be payable if at the time the amounts were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States.

(D) If a circumstance described in paragraph (1)(A), (B), (C), (D), or (E) occurs after the completion of 3 years of a service obligation under this section, but before the completion of the fourth year of such service obligation, the United States shall be entitled to recover from the individual, within 1 year after the date of the occurrence of such circumstance, an amount equal to—

(i) the total amount of awards received by such individual under this section minus $11,250; plus

(ii) the interest on such amounts which would be payable if at the time the amounts were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States.

(3) EXCEPTIONS.—(A) The Director may provide for the partial or total waiver or suspension of any service obligation or payment by an individual under this section whenever compliance by the individual is impossible or would involve extreme hardship to the individual, or if enforcement of such obligation with respect to the individual would be unconscionable.

(B) Any obligation of an individual under this section for payment under paragraph (2) may be released by a discharge in bankruptcy under title 11, United States Code, only if such discharge is granted after the expiration of the 5-year period beginning on the first date that such payment is required.

SEC. 6. TWO-YEAR CAREER OPTION.

(a) ESTABLISHMENT OF PROGRAM.—The Director shall establish a Science, Mathematics, and Research Technologies Scholarship Program for making awards to students pursuing higher education programs in certain fields of science, mathematics, and engineering in which shortages in the workforce of the United States are projected on the basis of data on scientific and engineering resources obtained under section 3(a)(6) of the National Science Foundation Act of 1950 (42 U.S.C. 1862(a)(6)).

(b) ELIGIBILITY.—Only individuals who are—

(1) citizens or nationals of the United States, or who are aliens lawfully admitted to the United States for permanent residence;

(2) majoring in science, mathematics, or engineering;

(3) in the last 2 years of a baccalaureate degree program; and

(4) enrolled in an institution of higher education in the United States which is currently accredited by a nationally recognized accrediting agency or association,

shall be eligible for awards under this section.

(c) SELECTION CRITERIA.—Individuals shall be selected to receive awards under this section on the basis of academic merit and demonstrated accomplishment in science, mathematics, or engineering. In addition, consideration may be given to the financial need of the individual, and to promoting participation by minorities, women, and individuals with disabilities.

(d) NATURE AND AMOUNT OF SCHOLARSHIPS.—(1) A total of 500 awards for two-year scholarships shall be made each year at the rate of—

(A) $5,000; plus

(B) an amount, not to exceed $2,500, which is equal to the amount of financial aid made available to the student for such school year by the educational institution in which the student is enrolled;

per student per year.

(2) Scholarships awarded under paragraph (1) may be used only for tuition, fees, room and board, and other reasonable educational expenses.

(e) MAINTAINING ELIGIBILITY.—(1) In order to maintain eligibility to receive funds pursuant to a scholarship awarded under this section, a student must—

(A) be enrolled at an institution of higher education in the United States that is currently accredited by a nationally recognized accrediting agency or association;

(B) major in any field of science, mathematics, or engineering;

(C) maintain superior performance, as determined by the Director; and

(D) except as provided in paragraph (2) or (3), carry a full-time academic work load, as determined by the institution in which the student is enrolled under standards applicable to all students enrolled in that student's program.

(2) Upon application by a scholarship recipient, the Director may make an exception to the requirements under paragraph (1) in any of the following cases:

(A) Active duty as a member of the armed services.

(B) Disability certified by a qualified physician.

(C) Exceptional personal circumstances or emergencies.

(D) Pregnancy, child-rearing, or other family responsibilities.

(3) Each exception made under paragraph (2) shall be effective for not longer than 2 years, after which the recipient may reapply for an additional exception under such paragraph.

(f) SERVICE REQUIREMENT.—As a condition of receiving an award under this section, a recipient shall be required, within 4 years after graduation from the baccalaureate degree program for which the award was made, to complete—

(1) two years of—

(A) service in a science, mathematics, or engineering related capacity in the employ of—

(i) the United States; or

(ii) any corporation or other entity, organized under the laws of the United States or of a State of the United States, 50 percent of which is owned by United States nationals, and which is engaged in scientific or engineering research or endeavor;

(B) postgraduate education in science, mathematics, or engineering at an institution of higher education which is accredited by a nationally recognized accrediting agency or association; or

(C) a combination of service and education described under subparagraphs (A) and (B); or

(2) a postgraduate degree program in science, mathematics, or engineering at an institution of higher education which is accredited by a nationally recognized accrediting agency or association.

(g) FAILURE TO COMPLETE SERVICE OBLIGATION.—

(1) GENERAL RULE.—If an individual who has received an award under this section—

(A) fails to maintain an acceptable level of academic standing in the educational institution in which he is enrolled, as determined by the Director;

(B) is dismissed from such educational institution for disciplinary reasons;

(C) withdraws from the baccalaureate degree program for which the award was made before the completion of such program;

(D) declares intent not to fulfill the service obligation under this section; or

(E) fails to fulfill the service obligation under this section,

such individual shall be liable to the United States as provided in paragraph (2).

(2) AMOUNT OF REPAYMENT.—If a circumstance described in paragraph (1) (A), (B), (C), (D), or (E) occurs before the completion of a service obligation under this section, the United States shall be entitled to recover from the individual, within 1 year after the date of such occurrence, an amount equal to—

(A) the total amount of awards received by such individual under this section; plus

(B) the interest on such amounts which would be payable if at the time the amounts were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States.

(3) EXCEPTIONS.—(A) The Director may provide for the partial or total waiver or suspension of any service obligation or payment by an individual under this section, for reasons including but not limited to pregnancy, child-rearing, or other family responsibilities, whenever compliance by the individual is impossible or would involve extreme hardship to the individual, or if enforcement of such obligation with respect to the individual would be unconscionable.

(B) Any obligation of an individual under this section for payment under paragraph (2) may be released by a discharge in bankruptcy under title 11, United States Code, only if such discharge is granted after the expiration of the 5-year period beginning on the first date that such payment is required.

SEC. 7. NOTIFICATION OF SECONDARY SCHOOLS.

The Director shall notify all public and private secondary schools and all institutions of higher education in the United States annually of the availability of scholarships under this Act.

SEC. 8. REINSTATEMENT OF ELIGIBILITY.

The Director shall determine circumstances under which eligibility of a scholarship recipient under this Act could be reinstated if the recipient seeks to reenter school after an interruption of schooling for personal reasons, including but not limited to pregnancy, child-rearing, and other family responsibilities.

SEC. 9. EFFECT OF CERTAIN CONTROLLED SUBSTANCE AND FELONY CONVICTIONS.

(a) GENERAL RULE.—Except as provided in subsection (b), or by a court under the authority of section 5301 of the Anti-Drug Abuse Act of 1988 (102 Stat. 4310), if any person is convicted under Federal or State law of the illegal use, possession, or distribution of a controlled substance (as such term is defined in the Controlled Substances Act), or of any crime which is a felony under Federal law or for an act which, if committed in a Federal jurisdiction, would be a felony under Federal law, and such crime was committed during a period with respect to which such person has maintained eligibility under section 4(f), 5(e), or 6(e), such person shall not be eligible to receive any further awards under this Act, and shall be liable to the United States for the repayment, within 1 year after such conviction, of all amounts received pursuant to awards made under this Act, plus the interest on such amounts which would be payable if at the time the amounts were received they were loans bearing interest at the maximum legal prevailing rate, as of the time of such conviction, as determined by the Treasurer of the United States.

(b) EXEMPTION.—A person subject to the provisions of subsection (a) may be exempted from those provisions in whole or in part if—

(1) that person, within 90 days of a conviction described in subsection (a), petitions the Director for a good cause exemption from subsection (a); and

(2) the Director approves the petition.

SEC. 10. AUTHORIZATION OF APPROPRIATIONS.

(a) Section 101(c) of the National Science Foundation Authorization Act of 1988 is amended—

(1) by striking "$2,388,000,000" and inserting in lieu thereof "$2,401,000,000"; and

(2) by amending paragraph (2) to read as follows:

"(2) Science and Engineering Education, $218,300,000, which shall be available for the following subcategories:

"(A) Science and engineering education programs, $205,300,000.

"(B) Scholarships under the Congressional Scholarships for Science, Mathematics, and Engineering Act, $13,000,000.".

(b) Section 101(d) of the National Science Foundation Authorization Act of 1988 is amended—

(1) by striking "$2,782,000,000" and inserting in lieu thereof "$2,808,000,000"; and

(2) by amending paragraph (2) to read as follows:

"(2) Science and Engineering Education, $266,200,000, which shall be available for the following subcategories:

"(A) Science and engineering education programs, $240,200,000.

"(B) Scholarships under the Congressional Scholarships for Science, Mathematics, and Engineering Act, $26,000,000.".

(c) Section 101(e) of the National Science Foundation Authorization Act of 1988 is amended—

(1) by striking "$3,245,000,000" and inserting in lieu thereof "$3,280,250,000"; and

(2) by amending paragraph (2) to read as follows:

"(2) Science and Engineering Education, $316,250,000, which shall be available for the following subcategories:

"(A) Science and engineering education programs, $281,000,000.

"(B) Scholarships under the Congressional Scholarships for Science, Mathematics, and Engineering Act, $35,250,000.".

(d) Section 101(f) of the National Science Foundation Authorization Act of 1988 is amended—

(1) by striking "$3,505,000,000" and inserting in lieu thereof "$3,545,750,000"; and

(2) by amending paragraph (2) to read as follows:

"(2) Science and Engineering Education, $348,750,000, which shall be available for the following subcategories:

"(A) Science and engineering education programs, $308,000,000.

"(B) Scholarships under the Congressional Scholarships for Science, Mathematics, and Engineering Act, $40,750,000.".

(e) Section 104 of the National Science Foundation Authorization Act of 1988 is amended by adding at the end the following new subsection:

"(c) Notwithstanding subsections (a) and (b), funds made available for science and engineering education programs under section 101(c)(2)(A), (d)(2)(A), (e)(2)(A), and (f)(2)(A) shall not be reduced below the amount appropriated for the preceding fiscal year for such purposes.".

SEC. 11. REPORT.

The National Science Foundation shall prepare and submit to the Congress no later than February 1, 1990, a report examining current efforts to improve the quality of elementary and secondary mathematics and science education and career potential for the underprivileged through joint efforts of business, school districts, and institutions of higher education, and recommending ways the Federal Government could encourage such efforts. The report shall include, to the extent possible, a comprehensive list of existing efforts, an assessment of what factors have made some such efforts more successful than others, and a review of the extent to which such efforts have drawn on Federal programs.

I. SUMMARY

PURPOSE OF THE BILL

The purpose of the bill is to strengthen the science and technology base of the United States by providing opportunities for young people from across the Nation who have demonstrated talent and interest in science and mathematics to pursue postsecondary education in science, mathematics, and engineering. A Congressional Scholarship Program is established at the National Science Foundation to provide undergraduate scholarships in science, mathematics, and engineering. The scholarship program is designed to have high visibility throughout the country in order to create role models in science and technology for young people and, particularly important, more role models for women. Ultimately, the pro-

gram seeks to increase participation by talented young people, including women, minorities and individuals with disabilities, in careers in science and engineering and in teaching careers in science and mathematics in elementary and secondary schools.

NATURE OF THE SCHOLARSHIP PROGRAM

The bill authorizes the National Science Foundation (NFS) to establish three types of competitive, merit-based undergraduate scholarships in science, mathematics, and engineering: (1) a four-year scholarship of $5,000 per year for one male and one female from each Congressional district; (2) 500 two-year scholarships of $7,500 per year for the junior and senior years for students willing to commit to teaching science or mathematics in elementary or secondary schools which receive assistance under Chapter 1 of Title I of the Elementary and Secondary Education Act of 1965; and (3) 500 two-year scholarships of $5000, with up to an additional $2,500 on a one-to-one matching basis from the university, per year for the junior and senior years for students willing to commit to working as a scientist or engineer for two years or willing to complete two years of graduate education in science, mathematics, or engineering.

Recipients of the two-year scholarships who fail to fulfill their service commitments are required to pay back to the government within one year the amount of the award, plus interest, at the maximum legal prevailing rate. Also, recipients of the four-year scholarships who fail to maintain eligibility for the program lose their scholarship and must pay back to the government the amount of the award, plus interest, under the terms prevailing for new borrowers under Part B of Title IV of the Higher Education Act of 1965, the Guaranteed Student Loan Program.

The intention of the Committee is for selection of scholarship recipients to be on the basis of competition with the principal selection criteria being academic merit, demonstrated accomplishment, and, for the four-year scholarships, academic potential and motivation to pursue a career in science. However, in final selection among candidates of essentially equivalent qualifications, NSF may take into consideration financial need and the promotion of greater participation in science and technology by women, minorities and individuals with disabilities.

FUNDING FOR THE SCHOLARSHIP PROGRAM

The bill amends the NSF Authorization Act of 1988 (P.L. 100–570) to provide a separate authorization for undergraduate scholarships within the Science and Engineering Education programs for fiscal years 1990 through 1993. The amounts authorized for the undergraduate scholarships are as follows:

Fiscal year:	
1990	$13,000,000
1991	26,000,000
1992	35,250,000
1993	40,750,000

II. Committee Actions

A hearing before the Subcommittee on Science, Research and Technology on March 9, 1989, included consideration of three science scholarship bills: H.R. 996, H.R. 1217 and H.R. 1293. Witnesses representing the American Association for the Advancement of Science, the Council of Scientific Society Presidents, and Sigma Xi, the Scientific Research Society, presented their views on the three pieces of legislation, as did the President of the Carnegie Foundation for the Advancement of Teaching. The testimony focused on the need for and likely benefits of undergraduate scholarships in science, mathematics, and engineering.

On April 12, 1989, the Subcommittee met to mark up proposed legislation on scholarships for students pursuing higher education in science, mathematics and engineering. The product of the Subcommittee action was a bill which added to the four-year undergraduate scholarship program of H.R. 996, two additional scholarship programs for the junior and senior years of college based on several provisions from H.R. 1293 and from H.R. 1217. The two-year scholarships differ from the four-year scholarship in that they include service commitments on the part of the recipient along with penalty provisions for failure to carry out the commitments. The provisions for graduate scholarships in H.R. 1217 were not included in the Subcommittee's reported bill. A new provision, not present in any of the bills as introduced, was added to the reported bill which removed eligibility from a recipient of any scholarship and required repayment, with interest at the maximum legal rate, within 90 days for any conviction of use, possession or distribution of a controlled substance or of any felony.

On July 27, 1989, the Committee marked up H.R. 996 as reported by the Subcommittee on Science, Research and Technology. The principal actions taken were to exempt nominating committees associated with the four-year scholarship program from the requirements of the Federal Advisory Committee Act; to amend the NSF Authorization Act of 1988 to include a specific new authorization for the undergraduate scholarship program; to target awards under one of the two year scholarship programs for students in fields in which shortages of scientific and technical personnel are projected in the United States; to convert four-year scholarships to normal student loans for recipients who fail to maintain eligibility; to modify the provisions regarding penalties for drug or felony convictions; and to allow NSF in making selection of awards among individuals of essentially equivalent qualifications to include consideration of financial need and the promotion of participation by women, minorities, and individuals with handicaps.

III. Explanation of Committee Amendment

The amendment in the nature of a substitute adopted by the Committee is presented at the beginning of this report.

GENERAL PROVISIONS OF SCHOLARSHIP PROGRAM

H.R. 996, as reported, authorizes three separate types of undergraduate scholarship programs for science, mathematics, or engi-

neering to be established by the National Science Foundation. The Committee intends that the scholarships be awarded in a competitive process with selection criteria based on merit. However, H.R. 996 allows NSF, in making final selection of awards among individuals of essentially equivalent merit, to give consideration to the financial need of the individual and to promoting participation by minorities, women, and individuals with disabilities. Section criteria are discussed further in the Committee Views.

The scholarships received under this program may be used only for tuition, fees, room and board, and other reasonable education expenses. NSF shall determine what constitutes a reasonable education expense. Scholarship award amounts are discussed further in the Committee Views.

In order to maintain eligibility to receive scholarship funds for the entire time interval of the award, a recipient must be enrolled in an acredited U.S. college or university; major in any field of science, mathematics, or engineering (except that for one of the two-year scholarships, the academic field is specified by NSF on the basis of projected shortages in the U.S. scientific and engineering workforce); maintain superior academic performance; and carry a full-time academic work load. The Committee intends that NSF require recipients of four-year scholarships, who attend universities that do not require students to declare majors during the first or first and second academic years, to be enrolled in academic courses that would lead to a baccalaureate degree in science, mathematics, or engineering within four years. The Committee also intends for NSF to define "superior academic performance" in a way that is consistent with a highly competitive, highly visible program which is designed to attract the most talented and motivated students.

H.R. 996, as reported, gives discretion to the NSF Director, upon application by a scholarship recipient, to relieve the requirements for an individual's maintaining eligibility for scholarships under specific circumstances:

(1) active duty as a member of the armed forces, (2) disability certified by a qualified physician, (3) exceptional personal circumstances or emergencies, or (4) pregnancy, child-rearing or other family responsibilities. An exception for one of the preceding reasons shall not be effective for longer than two years, except that an individual may reapply to the Director for an additional exception. The Committee intends that the Director be empowered to reinstate in the scholarship program individuals who are forced to interrupt their education for personal reasons, such as pregnancy, child-rearing and other family responsibilities and who do not, at the time of the interruption of schooling, request an exemption or whose period of exemption has expired.

In order to ensure maximum public awareness of the scholarship program, NSF is charged to notify all public and private secondary schools and all institutions of higher education in the United States, annually, of the existence of the scholarship program and of the process for applying for awards.

FOUR-YEAR SCHOLARSHIPS

A four-year scholarship program is created for individuals in their senior year of high school, or, if they have previously graduated from high school, upon making application for admission as a freshman to an institution of higher education, who show potential to successfully complete a postsecondary program in science, mathematics, or engineering and who display motivation to pursue a career in science, mathematics, or engineering. Specific criteria shall be established by the NSF Director to guide the nominating committees and to evaluate the potential and motivation of individuals who apply for scholarships.

Each scholarship shall provide $5,000 per year for four years, subject to an individual's maintaining eligibility as previously discussed. However, the NSF Director should adjust the amount received by a recipient in each year if the individual is on track to complete a four-year academic program in fewer than four years. This is described more fully in the Committee Views. If a recipient fails to maintain eligibility in the program as defined in the preceding section, the scholarship shall be terminated and the award amounts previously received shall be repaid to the United States as if the award amounts were a loan and the recipient were a new borrower under Part B of Title IV of the Higher Education Act of 1965.

The Director of NSF is directed to establish committees to nominate one male and one female from each Congressional district to receive a scholarship according to selection criteria established by NSF. The Director is charged to establish a nominating committee for each Congressional district or for a contiguous group of Congressional districts so long as the districts selected reflect a geographic region similar in demographic content, geography, and economic status and activity. The intention of the Committee is that nominating committees be formed to represent more than one Congressional district only when the districts have considerable similarity. The nominating committees are viewed as a significant factor in bringing local involvement and maximum public attention to the importance of science, mathematics, and engineering education and are a central feature of the four-year scholarship program.

Membership on the nominating committees shall be broad-based and include educators, scientists, mathematicians, and engineers, from the community at large. The nominating committee members are expected to serve as volunteers without any federal compensation. Finally, the committees are explicitly exempted from the requirements of the Federal Advisory Committee Act. The provisions affecting the nominating committees are discussed further in the Committee Views.

The Committee intends that actual selection of scholarship recipients be the responsibility of the NSF Director. Therefore, the Committee expects the Director to reject any nomination received from a nominating committee which does not meet the selection criteria established for the program. The Director shall then charge the nominating committee to provide a replacement nomination. The Director has complete authority for the composition of

the nominating committees and is responsible for ensuring that the committees faithfully discharge their responsibilities.

TWO-YEAR SCHOLARSHIPS

H.R. 996, as reported, creates two separate scholarship programs for individuals majoring in science, mathematics, or engineering who are in the last two years of a baccalaureate degree program and who are enrolled in an accredited institution of higher education in the United States. Individuals shall be selected by NSF primarily on the basis of academic merit and demonstrated accomplishment in science, mathermatics, or engineering. Both of the two-year scholarships include a service requirement as a condition for receiving an award.

One of the scholarship programs provides 500 new awards each year for two years at the rate of $7,500 per year to individuals willing to commit themselves to teach elementary or secondary science or mathematics for two years for each year of support. NSF shall provide up to an additional year of scholarship support beyond the baccalaureate degree, at the same rate of $7,500 per year, for individuals who require additional academic credits in education courses in order to obtain certification to teach. This optional year of support does not require a teaching payback. The teaching service commitment shall be completed by a recipient within six years of leaving the scholarship program and must be performed at a school receiving assistance under Chapter 1 of Title I of the Elementary and Secondary Education Act of 1965.

The second scholarship program provides 500 new awards each year for two years to individuals willing to commit themselves to complete two years of work as a scientist or engineer in the employ of the United States or of any entity organized under the laws of the U.S. or of a state of the U.S., at least 50 percent of which is owned by U.S. nationals and which is engaged in scientific or engineering research endeavor; or to complete two years of postgraduate education in science, mathematics, or engineering at an accredited institution; or to complete two years of a combination of work and postgraduate education; or to receive a postgraduate degree in science, mathematics, or engineering. Each scholarship shall be at the rate of $5,000 per year. An additional amount, not to exceed $2,500 per year, shall be available on a dollar-for-dollar matching basis from the educational institution in which the recipient is enrolled. Eligibility for this scholarship program shall be limited to students pursuing studies in fields of science, mathematics, and engineering in which shortages in the workforce of the United States are projected on the basis of the data normally collected by NSF on scientific and engineering resources. The Committee expects NSF to make clear in the annual award announcements for this scholarship program which fields of science, mathematics, and engineering are to be targeted in that year.

Failure to complete the service obligations in the two-year scholarship programs shall result in the recipient being liable to repayment of the award amounts, plus interest, determined as if at the time the amounts were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treas-

urer of the United States. Failure to complete the service obligation is defined as occurring if a recipient: fails to maintain acceptable academic performance, as determined by the Director; is dismissed for disciplinary reasons from the educational institution in which enrolled; withdraws from an acceptable baccalaureate degree program in science, mathematics, or engineering, as determined by the Director; declares the intention to NSF not to fulfill the service obligation; or fails to fulfill the service obligation as determined by NSF. The United States is entitled to receive full payment of the award amount due, plus interest, within one year of failure to complete the service obligation as defined in the preceding sentence.

For the scholarship program having a teaching obligation, the repayment provision in the bill allows for partial repayment in proportion to the amount of the service obligation which the individual completes. However, failure to complete the total service commitment of the other two-year scholarship program results in the requirement to repay the entire scholarship award, plus interest. For both scholarship programs, the Director has discretion to provide a partial or total waiver or suspension of any service obligation or payment by an individual for good cause. Finally, an individual may be released from any obligation for payment by a discharge in bankruptcy under Title 11, U.S. Code, only if such discharge is granted after the expiration of the five-year period beginning on the first date that such payment is required.

OTHER PROVISIONS OF THE BILL

H.R. 996, as reported, places a penalty on scholarship recipients who are convicted under Federal or State law of the illegal use, possession, or distribution of a controlled substance or of any crime which is a felony under Federal law or for any act which, if committed in a Federal jurisdiction, would be a felony under Federal law. If the crime which results in the aforementioned conviction occurs while a recipient is maintaining eligibility in the scholarship program, the individual is prohibited from receiving further awards under the scholarship program and is liable to the United States for repayment, within one year after conviction, all award amounts received, plus interest, on those amounts which would be payable if at the time received the amounts were loans bearing interest at the maximum legal rate as of the time of conviction, as determined by the Treasurer of the United States.

The penalties regarding the scholarship program resulting from drug or other felony convictions may be removed for good cause by the NSF Director upon petition by the scholarship recipient, who must submit the petition to the NSF Director within 90 days of a conviction. Also, the Committee intends that a court under the provisions of the Anti-Drug Abuse Act of 1988 would have discretion to exempt or modify the penalties imposed by H.R. 996 on a scholarship recipient following conviction on a drug offense. This is discussed more fully in the Committee Views.

H.R. 996, as reported, requires NSF to examine efforts now underway to improve the quality of elementary and secondary science and mathematics education and to enhance the career potential for economically disadvantaged students through the joint efforts of

business, school districts, and institutions of higher education. NSF is charged to prepare and submit to Congress by February 1, 1990 a report on this study including, to the extent possible, a comprehensive list of existing efforts, an assessment of the factors that make some efforts more successful than others, a review of the extent to which the efforts studied have drawn on federal programs, and recommendations for ways the Federal Government could encourage and expand successful efforts.

AUTHORIZATION LEVELS

H.R. 996, as reported, amends the NSF Authorization Act of 1988 (P.L. 100-570) to authorize a total of $13,000,000 for undergraduate scholarships for fiscal year 1990; $26,000,000 for fiscal year 1991; $35,250,000 for fiscal year 1992; and $40,750,000 for fiscal year 1993. These amounts are in addition to the amounts previously authorized in P.L. 100-570 for Science and Engineering Education programs.

H.R. 996, as reported, also amends P.L. 100-570 to prohibit NSF from transferring funds from Science and Engineering Education programs, other than undergraduate scholarships, in any fiscal year which would result in a reduction in the funding level of the Science and Engineering Education programs below that appropriated in the preceding fiscal year. The purpose of this provision is to make clear that the intention of the Committee in creating the new undergraduate scholarships is to avoid eroding funding for existing science education programs at NSF.

IV. Sectional Analysis of the Bill, H.R. 996

A bill to establish the Congressional Scholarships for Science, Mathematics, and Engineering.

Section 2.—Cites the background and need for the legislation.

Section 3.—Describes the purposes of the legislation.

Section 4(a).—Establishes a competitive, merit-based program to select one male and one female from each Congressional district each year to receive a four-year scholarship to complete a baccalaureate degree in science, mathematics, and engineering.

Section 4(b).—Requires NSF to establish for each Congressional district, or group of similar contiguous Congressional districts, broadly based volunteer committees to nominate one male and one female from each Congressional district to receive a four-year scholarship. Exempts the committees from the requirements of the Federal Advisory Committee Act. Provides authority to the NSF Director to reject nominees submitted by the nominating committees who do not meet all requirements for nomination and selection as specified in the bill.

Section 4(c).—Establishes as eligible for the scholarship program citizens, nationals or aliens lawfully admitted to the U.S. for permanent residence. Requires awardees to be in the senior year of high school or high school graduates making application for admission as a freshman to an institute of higher education and to have been accepted for admission to an accredited institution of higher education in the U.S. prior to receiving a scholarship.

Section 4(d).—Establishes as criteria for nomination and selection for scholarships the potential of an individual to successfully complete a postsecondary program in science, mathematics, or engineering and the motivation to pursue a career in science, mathematics, or engineering. Allows consideration in nomination and selection to be given to financial need of individuals and to promoting participation by minorities and individuals with disabilities.

Section 4(e).—Sets scholarship amount at $5,000 per year to be used only for tuition, fees, room and board, and other reasonable education expenses.

Section 4(f).—Requires scholarship recipients to be enrolled in an accredited U.S. institution of higher education; major in any field of science, mathematics, or engineering; maintain superior academic performance; and carry a full-time academic work load. Allows the NSF Director to suspend the preceding eligibility requirements upon application by a scholarship recipient for specific reasons listed in the bill. The suspension shall not exceed two years except that the individual may reapply for an additional exception. Requires that scholarship recipients who fail to maintain eligibility be required to repay scholarship amounts received, with interest, as if the amounts were normal federal student loans.

Section 4(g).—Requires NSF to notify each Member of Congress of scholarship selections made from such Member's district prior to public announcement.

Section 4(h).—Requires NSF to monitor the implementation of and compliance of the nominating committees with provisions of section 4.

Section 4(i).—Requires NSF to ensure that solicitation, nomination, and selection of students for scholarships be carried out without discrimination on the basis of race, age, physical disability, religion, ethnic background, economic status, or sexual preference.

Section 4(j).—Requires NSF to ensure that members of the nominating committees be selected without discrimination on the basis of race, age, physical disability, religion, ethnic background, economic status, sex, or sexual preference.

Section 5(a).—Establishes a competitive, merit-based scholarship program for students enrolled in a baccalaureate degree program in science, mathematics, or engineering who are willing to commit to teaching elementary or secondary science or mathematics.

Section 5(b).—Specifies that to be eligible for an award an individual must be a citizen, national or alien lawfully admitted to the U.S. and must be in the last two years of a baccalaureate degree program in science, mathematics, or engineering at an accredited U.S. institution of higher education.

Section 5(c).—Establishes as criteria for scholarship awards academic merit and demonstrated accomplishment in science, mathematics, or engineering. Allows NSF to give consideration to financial need of individuals and to promoting participation by minorities, women, and individuals with disabilities.

Section 5(d).—Provides for 500 new awards for two-year scholarships each year at the rate of $7,500 per year to be used only for tuition, fees, room and board and other reasonable educational expenses. Provides for an additional period of scholarship support, not to exceed one year, at the rate of $7,500 per year for scholar-

ship recipients who have completed their baccalaureate degree but require additional credits in education courses in order to obtain certification to teach.

Section 5(e).—Requires scholarship recipients to be enrolled in an accredited U.S. institution of higher education; major in any field of science, mathematics, or engineering; maintain superior academic performance; and carry a full-time academic work load. Allows the NSF Director to suspend the preceding eligibility requirements upon application by a scholarship recipient for specific reasons listed in the bill. The suspension shall not exceed two years except that the individual may reapply for an additional exception. Requires that scholarship recipients who fail to maintain eligibility be required to repay scholarship amounts received, with interest, as if the amounts were normal federal student loans.

Section 5(f).—Requires scholarship recipients to complete, within six years after conclusion of the period of scholarship support, at least two years of service for each year of scholarship support (but no more than four years total) as an elementary or secondary science or mathematics teacher at a school receiving assistance under Chapter 1 of Title I of the Elementary and Secondary Education Act of 1965.

Section 5(g).—Requires scholarship recipients who fail to maintain academic standing, are dismissed from their educational institution for disciplinary reasons, withdraw from an acceptable academic degree program, declare the intention not to fulfill the service obligation, or fail to fulfill the service obligation to repay to the Federal Government the total amount of scholarship funds received, plus interest, as if the amount received were a loan bearing interest at the maximum legal rate. Provides that the amount to be repaid is reduced in proportion to the amount of the service obligation which is completed by an award recipient. Provides that the NFS Director may allow for good cause a partial or total waiver of the service obligation or repayment of the award amount. Provides that an individual may be released from the obligation or repayment by a discharge in bankruptcy under Title 11, United States Code, only if such discharge is granted after the expiration of the five-year period beginning on the first date that such payment is required.

Section 6(a).—Establishes a scholarship program for students pursuing higher education programs in certain fields of science, mathematics, and engineering in which NSF statistics on scientific and engineering resources reveal projected shortages in the U.S. workforce.

Section 6(b).—Specifies that to be eligible for an award an individual must be a citizen, national or alien lawfully admitted to the U.S. and must be in the last two years of a baccalaureate degree program in science, mathematics, or engineering at an accredited U.S. institution of higher education.

Section 6(c).—Establishes as criteria for scholarship awards academic merit and demonstrated accomplishment in science, mathematics, or engineering. Allows NSF to give consideration to financial need of individuals and to promoting participation by minorities, women, and individuals with disabilities.

Section 6(d).—Provides for 500 new awards for two-year scholarships each year at the rate of $5,000 per year, plus up to an additional $2,500 per year on a one-to-one matching basis from the educational institution in which the scholarship recipient is enrolled, to be used only for tuition, fees, room and board, and other reasonable educational expenses.

Section 6(e).—Requires scholarship recipients to be enrolled in an accredited U.S. institution of higher education; major in any field of science, mathematics, or engineering; maintain superior academic performance; and carry a full-time academic work load. Allows the NSF Director to suspend the preceding eligibility requirements upon application by a scholarship recipient for specific reasons listed in the bill. The suspension shall not exceed two years except that the individual may reapply for an additional exception. Requires that scholarship recipients who fail to maintain eligibility be required to repay scholarship amounts received, with interest, as if the amounts were normal federal student loans.

Section 6(f).—Requires scholarship recipients to complete, within four years after graduation from the baccalaureate degree program for which the award was made, two years of employment as a scientist, engineering or mathematician for the U.S. Government or a U.S. company; or complete two years of postgraduate education in science, mathematics, or engineering at an accredited institution; or complete two years of a combination of employment and postgraduate education as described in the preceding; or complete a postgraduate degree program in sciejce, mathematics, or engineering.

Section 6(g).—Requires scholarship recipients who fail to maintain academic standing, are disiissed from their educational institution for disciplinary reasons, withdraw from an acceptable acadeiic degree program, declare the intention not to fulfill the service obligation, or fail to fulfill the service obligation to repay to the Federal Government the total amount of scholarship funds received, plus interest, as if the amount received were a loan bearing interest at the maximum legal rate. Provides that the NSF Director may allow for good cause a partial or total waiver of the service obligation or repayment of the award amount. Provides that an individual may be released from the obligation of repayment by a discharge in bankruptcy under Title 11, United States Code, only if such discharge is granted after the expiration of the five-year period beginning on the first date that such payment is required.

Section 7.—Requires NSF to notify all public and private secondary schools and all institutions of higher education in the U.S., annually, of the availability of scholarships under this bill.

Section 8.—Assigns to the NSF Director the authority to reinstate eligibility to scholarship recipients who have interrupted their schooling for personal reasons.

Section 9(a).—Requires that scholarship recipients convicted of certain drug offenses and certain other felonies be ineligible to receive further scholarship awards and be liable for repayment, within one year, of all award amounts received, plus interest, as if the award amounts were loans bearing interest at the maximum legal rate. Affirms that a court under the authority of the Anti-

Drug Abuse Act of 1988 may modify or waive the penalty called for under this section.

Section 9(b).—Provides the authority to the NSF Director to exempt, in whole or in part, a scholarship recipient from the penalties of this section for good cause upon petition by the individual to NSF within 90 days of conviction.

Section 10.—Amends the NSF Authorization Act of 1988 by adding the following authorization for undergraduate scholarships to the amounts in the Act for Science and Engineering Education and by increasing the total NSF authorization in each year by a like amount:

Amends the NSF Authorization Act of 1988 by prohibiting NSF from transferring funds from the Science and Engineering Education programs, other than the undergraduate scholarships, which would result in reducing funds available below the level appropriated for the Science and Engineering Education programs in the preceding fiscal year.

Section 11.—Requires NSF to submit a report to Congress by February 1, 1990 which examines current efforts to improve the quality of elementary and secondary mathematics and science education and the career potential for the underprivileged, assesses the factors which have made some efforts more successful than others, reviews the linkage with federal programs, and recommends ways the Federal Government could encourage greater efforts.

V. Committee Views

1. The human resource pipeline for science, mathematics and engineering

Background

The Nation can no longer take for granted the supply of scientific talent. At a time when the size of the traditional college-aged population group is declining by about 25 percent, a smaller percentage of undergraduate students is choosing to study science, mathematics, or engineering.

From 1966 to 1987, college freshman planning to major in biological sciences, engineering, physical sciences, and mathematics fell from 21 to 14 percent. Interest in mathematics dropped by more than four-fifths, from 4.5 to 0.6 percent. Freshman selecting engineering careers dropped by more than one-fourth, from 12 to 8.5 percent between 1982 and 1987.

Growth in participation by women in careers in science, mathematics and engineering has been too slow to help offset these trends. Women now receive 38 percent of the total science-related undergraduate degrees, but these are concentrated largely in the social and life sciences. In recent years, the share of undergraduate science and engineering degrees obtained by women has shown no increase and in engineering, computer science and the physical sciences is declining.

An important factor in the declining interest of college students in science and engineering is the quality of instruction they receive in their elementary and secondary schooling. Recent results of standardized tests in science and mathematics comparing student

performance in different countries have documented the mediocre to poor performance of American students at elementary and secondary levels. Although there are many factors which contribute to this poor showing, it is clear that we need more talented science and mathematics teachers in the Nation's classrooms who are committed to teaching and who are firmly grounded in their subjects.

Committee view

The Committee, through the Congressional Scholarships Program, seeks to stimulate interest among undergraduate students in careers in science, mathematics and engineering and seeks to improve elementary and secondary science and mathematics instruction by attracting talented students to teaching careers.

In addition to providing educational support to the individual recipients of scholarships, the Congressional Scholarships Program is intended to be a prized award, having high visibility throughout the Nation to encourage role models in science, mathematics and engineering for young people and, particularly important, more role models for women. To help achieve the level of visibility desired, the National Science Foundation (NSF) is charged to publicize widely the availability of the scholarships, to establish committees at the Congressional district-level to nominate candidates for the four-year scholarships, and to notify Congressmen of awards to their constituents in advance of public announcement. Also, the Committee encourages NSF to explore ways to reinforce the group identity of scholarship recipients and to encourage recipients to interact with secondary schools in order to publicize the Congressional Scholarships Program and, generally, to increase interest among high school students in pursuing science, mathematics or engineering majors in college.

2. Selection criteria for congressional scholarships

Committee view

All three scholarships are merit scholarships. Students are to be selected on the basis of academic merit and potentials in, and commitment to their fields.

Other factors should come into consideration only after students have been evaluated on the basis of merit. At that point, in deciding among students of relatively equal merit, NSF and the nominating committees may give consideration to selection students on the basis of financial need and increasing participation in science, mathematics and engineering by women, minorities and people with disabilities. No student should be passed over for a student of lesser merit because of other considerations.

The Committee recognizes the need to increase the number of women, minorities and people with disabilities in science. Minority children make up a growing percentage of the school-age population, yet these students are the least likely, statistically, to pursue studies in science, mathematics or engineering. Successful minority and disabled scientists and engineers serve as important role models for younger generations. Thus, to the extent these scholarships encourage women, minorities and people with disabilities to

become successful scientists, they will be contributing to the effort to solve the long-term supply problems in these fields.

3. Scholarship award amounts

Committee view

The Committee intends that the award amounts specified for the four-year scholarships and for the two types of two-year scholarship are maximum amounts. Scholarship funds may be used only for tuition, fees, room and board, and other reasonable education expenses, as determined by NSF. Scholarship awards in any year shall not exceed the total funds required in that year by the recipient to cover these categories of expenses.

For four-year scholarships, the Committee intends that the maximum award to an individual recipient during the period of eligibility be $20,000. Normally, this would be at the rate of $5,000 per year for four years, assuming all requirements for maintaining eligibility are met. However, if a four-year scholarship recipient is in a program leading to be baccalaureate degree in fewer than four years, the amount of the scholarship funds may exeed $5,000 in any one year, but the total received while the individual is in the program shall not exceed $20,000.

4. Service commitment in two-year scholarship programs

Committee view

The Committee tailored the two-year scholarship programs to lead recipients into specific career paths. To that end, the programs impose penalties for failure to fulfill the service requirements. The Committee expects NSF in publicizing these scholarships to make a concerted effort to inform potential applicants of the nature of the service commitment and of the penalties for withdrawing from the scholarship. In establishing the criteria for selection among candidates of essentially equivalent academic merit and demonstrated accomplishment, NSF may take into account the candidates' potential for success in teaching, in graduate level education, or in working as a scientist or engineer after the baccalaureate degree.

For the two-year scholarship with a service commitment for teaching, a recipient may receive support for up to one additional year beyond completion of the baccalaureate degree for the purpose of obtaining credits in education courses necessary for becoming certified as a teacher. The Committee intends that NSF determine the need for this additional academic credit. The period of support for this purpose incurs no service commitment. Therefore, the maximum period of service commitment under this scholarship award is four years.

Students receiving the two-year "career option" scholarship may fulfill their service requirement by either working for the U.S. Government or a U.S. company if the student does not go on to graduate school. The National Science Foundation should take all reasonable steps to assist these students in securing such employment. Such steps could include ensuring that federal agencies are aware that these students are seeking jobs pursuant to a federal requirement, providing lists of suitable openings at NSF, and pro-

viding information to students on how to seek the requisite employment. The Committee does not however, intend to make NSF responsible for finding jobs for the students nor does the legislation guarantee students a federal job. Job seeking should and must remain an individual responsibility.

5. Nominating committees for four-year scholarship program

Committee view

An important benefit of the four-year scholarship program is derived from the selection process itself, which is designed to stimulate extensive community involvement. The requirement for nominating committees to be established for each Congressional district, or for small groups of Congressional districts, will stimulate local interest in the scholarship program, and the resulting publicity will have a multiplier effort, spurring the interest of young people in pursuing careers in science or engineering far beyond the numbers who will actually receive scholarships.

The Committee believes that there will be enthusiastic support for the scholarship program among educators, scientists, mathematicians, and engineers in localities across the country. The Committee also expects that individuals asked to serve as members of the nominating committees will consider such service a professional responsibility and an honor and will readily agree to participate on a voluntary basis without compensation. Further, the Committee intends that overhead costs associated with operating the scholarship program be held to a minimum. Consequently, per diem and travel expenses for members of the nominating committees are not subject to reimbursement by the National Science Foundation (NSF).

The sole function of the broadly-based nominating committees is to review the qualifications of candidates for the four-year scholarships according to specific criteria developed by NSF, in conformity with the general criteria stated in the Act. Actual selection of scholarship awardees is the responsibility of the NSF Director. To protect the privacy of individuals being considered, meetings of the nominating committees will be closed to the public.

The nominating committees are explicitly exempted from the requirements of the Federal Advisory Committee Act (FACA). This exemption is made because of the narrow role of the nominating committees and because essentially all of the deliberations of the committees will occur in session closed to the public to protect the privacy of prospective nominees. Moreover, applying all of the administrative requirements of FACA to the large number of nominating committees would result in a large administrative burden and excessive cost to the Federal Government relative to the size of the scholarship program.

6. Effect of Certain Controlled Substance and Felony Convictions

Committee view

The bill affirms that courts have the authority under the Anti-Drug Abuse Act of 1988 to modify or waive the penalties in section 9, when they have been incurred by a conviction for a drug offense.

The bill requires students to pay back their scholarships if they are convicted of having been engaged in the "illegal use, possession or distribution of a controlled substance" while they were receiving a scholarship or maintaining their eligibility for one. By referring to the period of "maintaining eligibility," the Committee means to include the periods between semesters and school years and the periods when students are covered by exceptions granted under Sections 4(f)(2), 5(e)(2) and 6(e)(2). The repayment requirements apply both to misdemeanor and felony drug crimes under state and federal law.

Repayment is also triggered by conviction for any other federal felony or "for an act which, if committed in a federal jurisdiction would be a felony under federal law." The latter language was included to ensure some uniformity and consistency in cases involving state felony convictions and to avoid application of the repayment sanction for convictions under unique or obscure state statutes (such as those that make it a felony to place bets on dog fighting), or for convictions for crimes which, in most states, would not be felonies. The Committee intends repayment to be required after convictions for more generally accepted state felonies, such as murder, rape or other violent crimes.

The bill also gives the Director of the National Science Foundation the authority to exempt an individual, upon petition, from any or all of the penalties in subsection (a) of section 9 for a good cause. The Committee expects this authority to be used only in exceptional circumstances.

VI. Legislative History

During the latter part of the second session of the 100th Congress, a bill, H.R. 5518, to establish an undergraduate scholarship program for science, mathematics, an engineering was introduced in the House by Rep. Walgren. A companion measure, S. 2916, was later introduced in the Senate by Sen. Glenn. No action was taken on these bills by either the House or Senate.

In the first session of the 101st Congress, Rep. Walgren reintroduced the scholarship bill, H.R. 996, and Sen. Glenn reintroduced the companion version, S. 134. H.R. 996 was referred to the House Committee on Science, Space, and Technology, and S. 134 to the Senate Committee on Labor and Human Resources.

Also in the first session of the 101st Congress, two additional bills were introduced in the House which focused on scholarship programs for science, mathematics, and engineering: H.R. 1217 introduced by Rep. Slaughter and H.R. 1293 introduced by Rep. Boehlert. Both bills were referred to the Committee on Science, Space, and Technology. Finally, the President presented to Congress the Educational Excellence Act of 1989, which included the National Science Scholars Program for undergraduate scholarships in the physical, life and computer sciences, mathematics, and engineering to be administered by the Department of Education. The President's proposal was introduced in the House as H.R. 1675 and in the Senate as S. 695. H.R. 1675 was referred to the House Committee on Education and Labor, and S. 695 to the Senate Committee on Labor and Human Resources.

In the House, the Subcommittee on Science, Research and Technology of the Committee on Science, Space, and Technology held hearings on H.R. 996, H.R. 1217 and H.R. 1293 on March 9, 1989. In a Subcommittee markup on April 12, 1989, provisions from H.R. 1217 and H.R. 1293 were incorporated in H.R. 996. The modified version of H.R. 996 was marked up and ordered reported by the Committee on Science, Space, and Technology on July 27, 1989.

In the Senate, the Committee on Labor and Human Resources marked up and ordered reported S. 695 on July 26, 1989. The National Science Scholars Program was changed by essentially deleting the original version of this program and replacing it with many of the provisions from S. 134. The main changes to the provisions of S. 134 were to authorize the scholarship program in the Department of Education with responsibility for selection of awardees given to the NSF Director; to include scholarship awards for residents of the District of Columbia, Puerto Rico, and each of the U.S. Trust Territories; and to replace the scholarship nominating committee structure with a special national board of scientists, mathematicians, educators, engineers and representatives of the business community to select nominees for scholarships.

VII. Committee Oversight Activities

Testimony was obtained in a hearing on March 9, 1989, on three scholarship bills referred to the Committee: H.R. 996, H.R. 1217 and H.R. 1293. Witnesses from the American Association for the Advancement of Science, the Council of Scientific Society Presidents, Sigma Xi, and the Carnegie Foundation for the Advancement of Teaching presented their views on the need for and likely benefits of undergraduate scholarships in science, mathematics, and engineering. The Committee also received general testimony on the state of science and mathematics education in the U.S. and on programs for upgrading precollege and undergraduate education from a variety of federal and state agencies and from the education community at a series of hearings on May 23 and 24 and on June 7, 1989. Specific problems associated with attracting women, minorities and the disabled to science and technology were reviewed by the Committee in a hearing on June 28, 1988.

Further, Committee staff have attended meetings with NSF staff to review plans and programs at NSF related to science and engineering education. Also, staff have reviewed numerous reports related to U.S. manpower needs in science and technology. In addition, the Committee requested the Office of Technology Assessment to analyze the factors that will affect the supply of scientists and engineers in the foreseeable future. The assessment resulted in two publications: *Educating Scientists and Engineers: Grade School to Grad School,* June 1988 and *Elementary and Secondary Education for Science and Engineering,* December 1988.

The results and findings from the aforementioned oversight activities are incorporated in the recommendations found in the bill and report.

VIII. Oversight Findings and Recommendations by the Committee on Government Operations

No statement of findings and recommendations on oversight activity pursuant to rule X, clause 2(b)(2), and rule XI, clause 2(l)(3), of the Rules of the House of Representatives, have been submitted by the Committee on Government Operations for inclusion in this report.

IX. Congressional Budget Office Cost Estimate

U.S. Congress,
Congressional Budget Office,
Washington, DC, August 1, 1989.

Hon. Robert A. Roe,
Chairman, Committee on Science, Space, and Technology,
U.S. House of Representatives, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has prepared the attached cost estimate for H.R. 996, the Congressional Scholarships for Science, Mathematics, and Engineering Act.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

Robert D. Reischauer, *Director.*

CONGRESSIONAL BUDGET OFFICE, COST ESTIMATE

1. Bill number: H.R. 996.

2. Bill title: Congressional Scholarships for Science, Mathematics, and Engineering Act.

3. Bill status: As ordered reported by the House Committee on Science, Space, and Technology, July 27, 1989.

4. Bill purpose: H.R. 996 would establish science, mathematics, and engineering scholarship programs to be administered by the National Science Foundation (NSF). The bill would establish three different scholarships: a four-year scholarship at $5,000 per year awarded to two recipients from each Congressional district; a two-year scholarship program at $7,500 per year awarded to 500 people who agree to teach after completing their education; and a two-year scholarship at $7,500 per year for 500 people who agree to work for the government after completing their education. To fund this program, the bill would authorize appropriations to the NSF of $13 million for fiscal year 1990, $26 million for 1991, $35 million for 1992, and $41 million for 1993.

5. Estimated cost to the Federal Government:

[By fiscal year, in millions of dollars]

	1990	1991	1992	1993	1994
Estimated budget authority	32	32	32	32	32
Estimated outlays	5	23	28	32	32

The costs of this bill would be in budget function 250.

Basis of estimate: Although this bill would provide an authorization of appropriations, the spending would be considered mandatory because the bill would not limit the scholarship payments to amounts provided in advance in appropriation acts. The estimated budget authority shown in the table above equals the amount required to fund each year's scholarship commitments for the full two- or four-year duration of those commitments. The estimated outlays are based on historical spending patterns for similar programs.

6. Estimated cost to State and local government: None.
7. Estimate comparison: None.
8. Previous CBO estimate: None.
9. Estimate prepared by: Michael Sieverts (226–2860).
10. Estimate approved by: C.G. Nuckols (for James L. Blum, Assistant Director for Budget Analysis).

X. Impact on Inflation

In accordance with rule XI, clause 2(l)4, of the Rules of the House of Representatives, this legislation is assessed to have no adverse inflationary effect on prices and costs in the operation of the national economy.

XI. Committee Recommendation

A quorum being present, the bill was ordered reported on July 27, 1989, by a voice vote of the Committee.

XII. Changes in Existing Law Made by the Bill, As Reported

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, changes in existng law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

National Science Foundation Authorization Act of 1988

TITLE I—NATIONAL SCIENCE FOUNDATION AUTHORIZATION

AUTHORIZATION OF APPROPRIATIONS

Sec. 101. (a) * * *

* * * * * * *

(c) There is authorized to be appropriated to the Foundation [$2,388,000,000] *$2,401,000,000* for fiscal year 1990, which shall be available for the following categories:

(1) * * *

[(2) Science and Engineering Education, $205,300,000.]

(2) Science and Engineerng Education, $218,300,000, which shall, be available for the following subcategories:

(A) Science and engineering education programs, $205,300,00.

(B) Scholarships under the Congressional Scholarships for Science, Mathematics, and Engineering Act, $13,000,000.

* * * * * * *

(d) There is authorized to be appropriated to the Foundation [$2,782,000,000] *$2,808,000,000* for fiscal year 1991, which shall be available for the following categories:

(1) * * *

[(2) Science and Engineering Education, $240,200,000.]

(2) Science and Engineering Education, $266,200,000, which shall be available for the following subcategories:

(A) Science and engineering education programs, $240,200,000.

(B) Scholarships under the Congressional Scholarships for Science, Mathematics, and Engineering Act, $26,000,000.

* * * * * * *

(e) There is authorized to be appropriated to the Foundation [$3,245,000,000] *$3,280,250,000* for fiscal year 1992, which shall be available for the following categories:

(1) * * *

[(2) Science and Engineering Education, $281,000,000.]

(2) Science and Engineering Education, $316,250,000, which shall be available for the following subcategories:

(A) Science and engineering education programs, $281,000,000.

(B) Scholarships under the Congressional Scholarships for Science, Mathematics, and Engineering Act, $35,250,000.

* * * * * * *

(f) There is authorized to be appropriated to the Foundation [$3,505,000,000] *$3,545,750,000* for fiscal year 1993, which shall be available for the following categories:

(1) * * *

[(2) Science and Engineering, $308,000,000.]

(2) Science and Engineering Education, $348,750,000, which shall be available for the following subcategories:

(A) Science and engineering education programs, $308,000,000.

(B) Scholarships under the Congressional Scholarships for Science, Mathematics, and Engineering Act, $40,750,000.

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TRANSFER OF FUNDS

SEC. 104. (a) * * *

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(c) Notwithstanding subsections (a) and (b), funds made available for science and engineering education programs under section 101(c)(2)(A), (d)(2)(A), (e)(2)(A), and (f)(2)(A) shall not be reduced

below the amount appropriated for the preceding fiscal year for such purposes.

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